Monthly Progress Report

REC'D 2-5-93
F.B.

NAME: Ciba Geigy
I.D. NO.: RID001194323
FILE LOC: R-9
OTHER:

Submitted to: Mr. Frank Battaglia, Project Manager
USEPA Region I
Waste Management Building
90 Canal Street
Boston, MA 02114

Submitted by: Ms. Diane Leber, Project Coordinator
CIBA-GEIGY Corporation
444 Sawmill River Road
Ardsley, NY 10502

Pursuant to: RCRA I-88-1088

Facility Site: Cranston, RI

Period Covered: January 1993 (26 December 1992 – 22 January 1993)*

Date Submitted: 10 February 1993

1.0 SUMMARY

This is the thirty-first monthly progress report. Four significant events occurred this month.

Stabilization Investigation. The 30-day constant rate test was completed on 12/30/92 as scheduled. Wells RC-1, RC-2, and MW-2S were sampled for the 30-day constant rate test on 12/29/92. The results of the scheduled sampling performed on 12/16/92 (Attachment A) were submitted to the Cranston POTW via Self Monitoring Report. Reduction and interpretation of the data from the pretreatment system sampling began. Validation of the analytical data for groundwater samples from the newly installed monitoring wells in the Production Area (shown in Figure 1) was completed (Attachment B). Reduction and interpretation of the data from the HIVAC™ extraction pilot test and from the 72-hour tests of RC-1 and RC-2 continued; reduction and interpretation of the data from the 30-day constant rate test began. On 1/5/93, the additional short-term constant rate aquifer tests began on selected monitoring wells and piezometers to help design the groundwater capture system. Piezometer P-35S was sampled for the short-term constant rate tests on 1/5–6/93; monitoring well MW-13S was sampled on 1/11–12/93; MW-12S was sampled on 1/18–19/93; MW-3S was sampled on 1/20–21/93. The tests were completed on 1/21/93 and reduction of the data from these tests began. Planning for other stabilization/Phase II activities continued.

Change in Plan: Evaluation of the data from the 30-day constant rate test indicated that the 30-day flush/surge test is not warranted at this time. [Changes in plan are discussed in Section 8.0.]

Project Management. On 1/4/93, the Cranston Department of Public Works granted an extension from 12/31/92 to 3/31/93 of CIBA-GEIGY's permit to discharge water to the Cranston POTW. On 1/5/93, a teleconference call was held with the USEPA, CIBA-GEIGY, and Woodward-Clyde Consultants to discuss the approved Stabilization Work Plan and scheduling issues; it was agreed that the names and schedules for the deliverables would be adhered to as discussed in the approved Stabilization Work Plan. A meeting of the stabilization authoring team was held on 1/7/93 at Woodward-Clyde offices in Wayne NJ to discuss high-level strategies, schedules, and outlines for the Stabilization Investigation Report and Design Concepts Proposal; preparation of that document began.

*As agreed, the reporting period will be monthly through the fourth Friday of the month.

Water Level Monitoring. Monthly groundwater level monitoring continued. Processing groundwater level data from the automatic recorders (transducers) continued.

Hydrological Investigation. Stage height measurements of the river continued. Processing river stage data from the automatic recorders (transducers) continued.

2.0 TASKS AND ACTIVITIES COMPLETED

The sampling and other activities (subtasks) that were completed are reported here.

2.1 Sampling Activities Completed

The following samples were collected:

Sampling Activity	Location(s)	Date(s) Sampled	No. of Samples	Date(s) Sent for Analysis	Analysis
Groundwater Sampling, 30-Day Test	RC-1	12/29/92	1	12/29/92	A
	RC-2	12/29/92	1	12/29/92	A
	MW-2S	12/29/92	1	12/29/92	A
Groundwater Sampling, Short-Term Constant Rate Tests	P-35S	1/5–6/93	5	1/6/93	B
	MW-13S	1/11–12/93	5	1/13/93	B
	MW-12S	1/18–19/93	5	1/19/93	B
	MW-3S	1/20–21/93	5	1/21/93	B

A = analyzed for Appendix IX volatiles and selected metals by PACE Laboratories

B = analyzed for TCL volatile organics (Method 8240) and total concentrations of selected metals (iron, manganese) by CIBA-GEIGY Laboratories

2.2 Other Activities Completed

The other activities (subtasks) completed during this reporting period were described in Section 1.0.

3.0 JEOPARDY TASKS (scheduled tasks not completed)

No tasks were in jeopardy as of 22 January 1993.

4.0 OTHER TASKS UNDERWAY (and on schedule)

The tasks that were underway (and on schedule as of 22 January 1993) were described in Section 1.0.

5.0 DATA OBTAINED

Groundwater level data have been obtained but have not yet been peer reviewed. Continuous groundwater level data from the automatic recorders (transducers) were downloaded but have not yet been processed. Stage height measurements of the river were obtained but have not yet been reviewed. Data obtained from sampling selected locations within the pretreatment system (to evaluate the effectiveness of major unit operations) were received but have not yet been analyzed. Analytical results for the groundwater sampled on 12/1–3/93, and for the groundwater sampled for the 30-day constant rate test, were received but have not yet been peer reviewed. Data from the additional single-well constant rate

aquifer tests have been collected but have not yet been processed. Analytical results for the effluent samples (collected on 12/16/92) were received; the results indicated that CIBA-GEIGY is in compliance with the discharge limitations set by the Cranston POTW. These results are included in Attachment A. Validation of the analytical data from groundwater sampling of the newly installed monitoring wells in the Production Area was completed; these results are included in Attachment B.

6.0 PROBLEM AREAS

The resolved, new, potential (i.e., anticipated or possible), and outstanding (i.e., still unresolved) problem areas are reported here.

6.1 Resolved Problem Areas

No new problem areas were resolved during this reporting period.

6.2 New Problem Areas

No new problem areas remained unresolved during this reporting period.

6.3 Potential Problem Areas

No potential problem areas were identified during this reporting period.

6.4 Outstanding Problem Areas

No problem areas remained unresolved during this reporting period.

7.0 SCHEDULE OF TASKS (next two months)

The projected schedule is provided here. It covers the tasks to be performed in the next two months (February and March 1993), along with other comments or considerations.

Target Date	Task#	Task	Comments/Considerations
ongoing	—	Stabilization	
ongoing	9	Project Management	
ongoing	10	Data Management	
ongoing	11	Project Administration	
ongoing	12	Quality Assurance	
ongoing	13	Health & Safety Assurance	

8.0 CHANGES IN WORK PLAN

One change was made to the Work Plan during this reporting period.

30-Day Flush/Surge Test Postponed. Because equilibrium conditions of selected organic contaminants in groundwater were not achieved during the 30-day constant rate test, the 30-day flush/surge test was postponed. Longer test periods will be needed to establish equilibrium and then evaluate the effect that surging has on reducing contaminant concentrations in the ground-

water. Based on these results, conducting the flush/surge test will be more appropriate during the implementation phase when the full-scale groundwater capture and pretreatment system can be used to establish equilibrium.

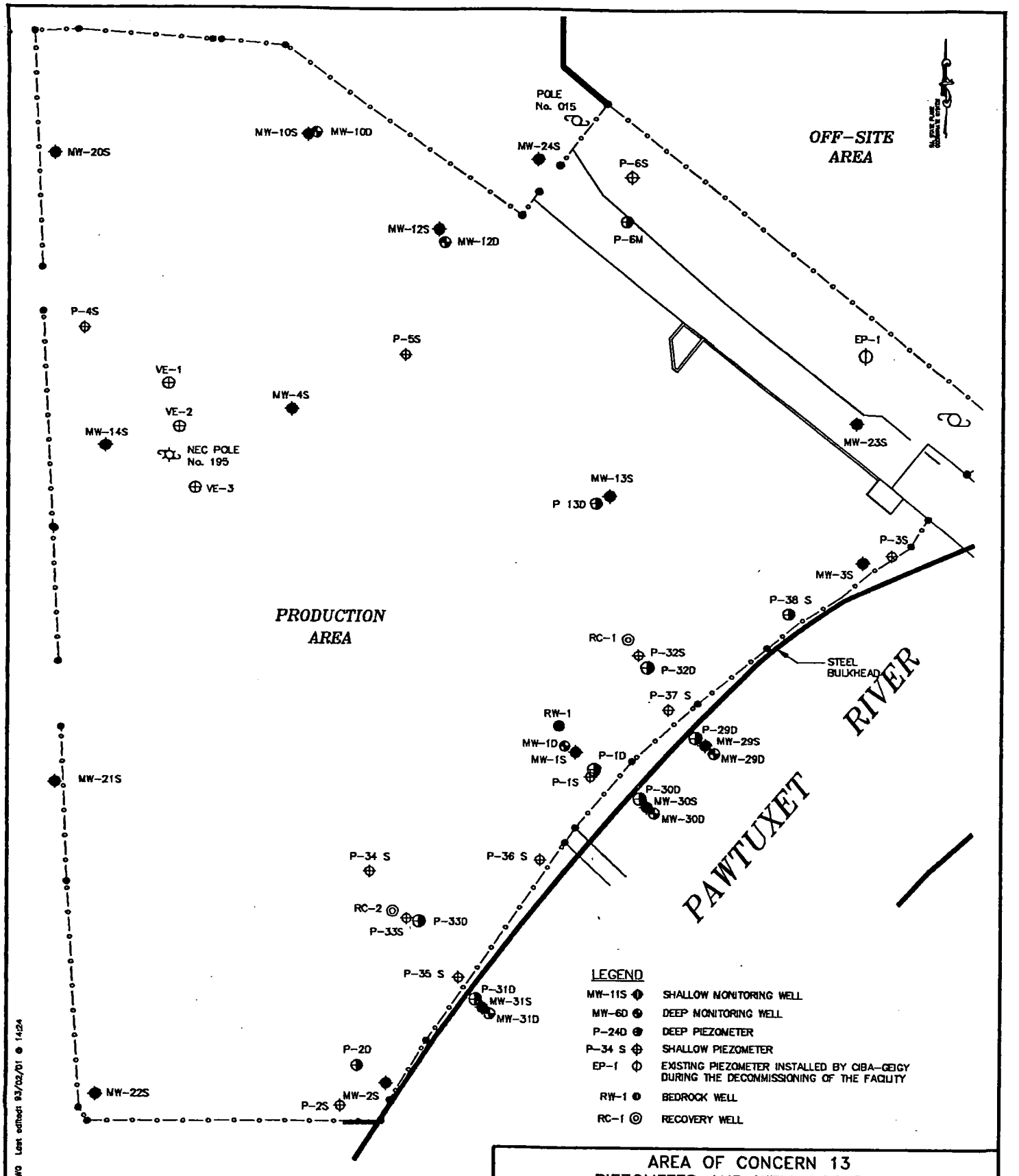
9.0 OTHER COMMENTS

The plans going forward into February and March include:

- completing the data acquisition for the stabilization investigation pilot tests,
- beginning to develop the Stabilization Investigation Report and Design Concepts Proposal,
- beginning Phase II soil sampling activities, and
- additional planning for future investigations.

The following documents are appended:

- Attachment A — Analytical Results for Pretreatment System Samples Collected on 12/16/92
- Attachment B — Analytical Results for Groundwater Samples Collected from New Monitoring Wells in the Production Area



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AREA OF CONCERN 13
PIEZOMETER AND WELL LOCATIONS
CIBA-GEIGY
CRANSTON, RI

WOODWARD-CLYDE CONSULTANTS

CONSULTING ENGINEERS, GEOLOGISTS AND ENVIRONMENTAL SCIENTISTS
WAYNE, NEW JERSEY

DR.BY	MG	SCALE	AS SHOWN	PROJ.	87X4660
CK'D.BY	CLH	DATE	JAN 29 1993	FIG.NO.	

ATTACHMENT A

Analytical Results for Pretreatment System Samples Collected on 12/16/92

CIBA-GEIGY Facility
Cranston, Rhode Island

R.I. Analytical

Specialists in Environmental Services

CERTIFICATE OF ANALYSIS

Woodward-Clyde Consultants
Attn: Mr. Mark Houlday
201 Willowbrook Blvd.
P.O. Box 290
Wayne, NJ 07470

DATE RECEIVED: 12/17/92
DATE REPORTED: 12/24/92
P.O. #:
INVOICE NUMBER: E7115

SAMPLE DESCRIPTION: Six (6) water samples labelled Ciba-Geigy, Cranston, RI

Subject samples have been analyzed by our laboratory with the attached results.

Reference: Guidelines Establishing Testing Procedures For The Analysis of Pollutants, 40CFR, Part 136, July 1986.

If you have any questions regarding this work or if we may be of further assistance, please contact us.

Approved by:

Michael S. Rose
Laboratory Manager

Anthony E. Perrotti
President

wcc:cmc

CERTIFICATE OF ANALYSIS

Woodward-Clyde Consultants
DATE RECEIVED: 12/17/92
DATE REPORTED: 12/24/92

P.O. #:
INVOICE #: E7115

PARAMETER	EFFLUENT 6B	EFFLUENT 6C	EFFLUENT 6D	EFFLUENT 6A
Volatile Organic Compounds (Method#624):				
chlorobenzene	2 µg/l	<1 µg/l	<1 µg/l	2 µg/l
toluene	4 "	3 "	4 "	4 "
Acrolein	<5 µg/l	<5 µg/l	<5 µg/l	<5 µg/l
Acrylontrile	<5 "	<5 "	<5 "	<5 "

Note: A list of volatile organic compounds tested for and their detection limits are attached.

R.I. ANALYTICAL LABORATORIES, INC.

CERTIFICATE OF ANALYSIS

Woodward-Clyde Consultants
DATE RECEIVED: 12/17/92
DATE REPORTED: 12/24/92
INVOICE #: E7115

PARAMETER	**EFFLUENT 6**
Total Metals:	
Antimony	<0.005 mg/l
Arsenic	0.007 "
Beryllium	<0.001 "
Cadmium	<0.01 "
Chromium	<0.03 "
Copper	<0.05 "
Lead	<0.04 "
Manganese	0.33 "
Mercury	<0.0005 "
Nickel	<0.02 "
Silver	<0.02 "
Zinc	<0.02 "

PARAMETER	**COMPOSITE OF EFFLUENT 6-1,6-2,6-3,6-4**
Semi- Volatile Organic Compounds (Method#625)	ND
Total Cyanide	0.01 mg/l

Note: A list of semi volatile organic compounds tested for and their detection limits are attached.

R.I. ANALYTICAL LABORATORIES, INC.

CERTIFICATE OF ANALYSIS

Woodward-Clyde Consultants
DATE RECEIVED: 12/17/92
DATE REPORTED: 12/24/92
INVOICE #: E7115

Volatile Organic Compounds
Method #624

chloromethane
bromomethane
vinyl chloride
dichlorodifluoromethane
chloroethane
methylene chloride
trichlorofluoromethane
1,1-dichloroethylene
1,1-dichloroethane
trans-1,2-dichloroethylene
chloroform
1,2-dichloroethane
1,1,1-trichloroethane
carbon tetrachloride
bromodichloromethane
1,2-dichloropropane
cis-1,3-dichloropropylene
trichloroethylene
trans-1,3-dichloropropylene
1,1,2-trichloroethane
dibromochloromethane
bromoform
tetrachloroethylene
1,1,2,2-tetrachloroethane
chlorobenzene
2-chloroethyl vinyl ether
dichlorobenzenes
benzene
toluene
ethylbenzene
xylenes

Detection Limit: 1 µg/l

RI ANALYTICAL LABORATORIES, INC.

CERTIFICATE OF ANALYSIS

Woodward Clyde Consultants
DATE RECEIVED: 12/17/92
DATE REPORTED: 12/24/92
INVOICE #: E7115

SEMI-VOLATILE ORGANIC COMPOUNDS
Method #625

Base/Neutral Extractables:

acenaphthene
acenaphthylene
anthracene
benzidine
benzo(a)anthracene
benzo(b)fluoranthene
benzo(k)fluoranthene
benzo(g,h,i)perylene
benzo(a)pyrene
bis(2-chloroethyl)ether
bis(2-chloroethoxy)methane
bis(2-chloroisopropyl)ether
bis(2-ethylhexyl)phthalate
4-bromophenyl phenyl ether
butylbenzyl phthalate
2-chloronaphthalene
4-chlorophenyl phenyl ether
chrysene
dibenzo(a,h)anthracene
di-n-butyl phthalate
1,2-dichlorobenzene
1,3-dichlorobenzene
1,4-dichlorobenzene
3,3'-dichlorobenzidine
diethyl phthalate
dimethyl phthalate
2,4-dinitrotoluene
2,6-dinitrotoluene
di-n-octyl phthalate
1,2-diphenylhydrazine
fluoranthene
fluorene
hexachlorobenzene
hexachlorobutadiene
hexachlorocyclopentadiene
hexachloroethane
Indeno(1,2,3-cd)pyrene
isophorone
naphthalene
nitrobenzene
N-nitrosodimethylamine
N-nitrosodiphenylamine
N-nitrosodi-n-propylamine
phenanthrene
pyrene
1,2,4-trichlorobenzene

Acid Extractables:

4-chloro-3-methylphenol
2-chlorophenol
2,4-dichlorophenol
2,4-dimethyl phenol
2-methyl-4,6-dinitrophenol
2,4-dinitrophenol
2-nitrophenol
4-nitrophenol
pentachlorophenol
phenol
2,4,6-trichlorophenol

DETECTION LIMIT: 10 µg/l

ATTACHMENT B

Analytical Results for Groundwater Samples Collected from New Monitoring Wells in the Production Area

CIBA-GEIGY Facility
Cranston, Rhode Island

CIBA-GEIGY, Cranston Site

EXPLANATION OF REPORT

VALIDATED ROUND II-S ANALYTICAL LABORATORY DATA

The attached report (2S-RPT) is a listing of analytes and their concentrations, along with supporting information, for groundwater samples obtained from new wells installed in the Production Area. (Round II-S).

The columns reported are SAMPLE NUMBER, ANALYTE, T/D (total or dissolved fraction), VALID DATA (validated data), UNITS (of measure), QUAL QC2 (validated data qualifier), and METHOD (test method).

Selection Criteria

Records which appear in this report identify analytes which were (1) detected (no qualifier or "J"-qualified), or (2) rejected "R" -qualified.

The order of listing is by sample number and test method. For example, method *6010W* is test method number 6010 (metals) in a water (W) medium.

CIBA-GEIGY/Cranston Site

Validated Round II-S Analytic Laboratory Data

Medium: GROUNDWATER

SAMPLE NUMBER	ANALYTE	T/D	VALID DATA	UNITS	QUAL QC2	METHOD
W-20S*II-S	BARIUM	D	27.1	UG/L	J	6010W
	BARIUM	T	44.9	UG/L	J	
	CHROMIUM	T	16.4	UG/L		
	IRON	T	14000	UG/L		
	MAGNESIUM	T	5300	UG/L		
	CALCIUM	T	35000	UG/L		
	MANGANESE	T	275	UG/L		
	CALCIUM	D	35000	UG/L		
	IRON	D	21	UG/L		
	MANGANESE	D	110	UG/L		
	MAGNESIUM	D	2800	UG/L		
	POTASSIUM	D	2.9	UG/L		
	SODIUM	D	15000	UG/L		
	POTASSIUM	T	3.8	UG/L		
	SODIUM	T	15000	UG/L		
	LEAD	T	14	UG/L		7421W
	SELENIUM	T	10	UG/L	R	7740W
	TRANS-1,4-DICHLORO-2-BUTENE		10	UG/L	R	8240W
	ISOBUTANOL		1000	UG/L	R	
	ACETONITRILE		1000	UG/L	R	
	N-OCTANE		5	UG/L	R	
	2-BUTANONE		50	UG/L	R	
	ACROLEIN		100	UG/L	R	
	PYRENE		.16	UG/L	J	8270W
	FLUORANTHENE		.15	UG/L	J	
	4-NITROQUINOLINE-N-OXIDE		100	UG/L	R	
	2-CYCLOHEXENE-1-ONE		.79	UG/L	J	
	ARAMITE		10	UG/L	R	
	2-CYCLOHEXENE-1-OL		.7	UG/L	J	
	TOTAL ALKALINITY		82	MG/L		ALKZW
	BICARBONATE ALKALINITY	T	82	MG/L		
	BIOLOGICAL OXYGEN DEMAND - 5	T	.45	UG/L		BOD5W
	CHLORIDE	T	20	MG/L		CHLOW

CIBA-GEIGY/Cranston Site

Validated Round II-S Analytic Laboratory Data

Medium: GROUNDWATER

SAMPLE NUMBER	ANALYTE	T/D	VALID DATA	UNITS	QUAL QC2	METHOD
MW-20S*II-S	CHEMICAL OXYGEN DEMAND	T	7	MG/L		CODZW
	LANGLIER INDEX		-1.88	UG/L		CORRW
	TOTAL HARDNESS, AS CACO3		100	MG/L		HARDW
	AMMONIA AS N	T	.034	MG/L		NH3NW
	NITRATE-NITRITE AS N	T	1.4	UG/L		NO32W
	OIL AND GREASE	T	.48	MG/L		ONGRW
	ORTHOPHOSPHATE	T	3	MG/L		OPO4W
	PH	T	6.1	MG/L		PHZZW
	SILICA,TOTAL		41000	MG/L		SIO2W
	SULFATE	T	12	MG/L		SO4ZW
	TOTAL DISSOLVED SOLIDS	T	200	MG/L		TDSZW
	TKN	T	.82	MG/L		TKNZW
	TOTAL ORGANIC CARBON	T	3.3	MG/L		TOCZW
	TOTAL ORGANIC HALIDES	T	.012	MG/L		TOXZW
	HYDROCARBONS	T	.66	MG/L		TPHCW
	TOTAL SUSPENDED SOLIDS	T	260	MG/L		TSSZW
MW-21S*II-S	POTASSIUM	T	7.2	UG/L		6010W
	MANGANESE	D	760	UG/L		
	MAGNESIUM	D	3100	UG/L		
	IRON	D	2000	UG/L		
	CALCIUM	D	25000	UG/L		
	CALCIUM	T	27000	UG/L		
	SODIUM	D	160000	UG/L		

2S-RPT

CIBA-GEIGY/Cranston Site

Validated Round II-S Analytic Laboratory Data

Medium: GROUNDWATER

SAMPLE NUMBER	ANALYTE	T/D	VALID DATA	UNITS	QUAL QC2	METHOD
W-21S*II-S	IRON	T	40000	UG/L		6010W
	MAGNESIUM	T	8900	UG/L		
	POTASSIUM	D	3.4	UG/L		
	MANGANESE	T	1200	UG/L		
	SODIUM	T	160000	UG/L		
	BARIUM	D	56.3	UG/L	J	
	NICKEL	T	77.5	UG/L		
	ZINC	T	212	UG/L		
	VANADIUM	T	65.4	UG/L		
	CHROMIUM	T	82.9	UG/L		
	COPPER	T	50.9	UG/L		
	BARIUM	T	197	UG/L	J	
	COBALT	T	25.3	UG/L	J	
	ARSENIC	D	10.2	UG/L		7060W
	ARSENIC	T	20.6	UG/L		
	LEAD	T	24.5	UG/L		7421W
	SELENIUM	T	50	UG/L	R	7740W
	TRANS-1,4-DICHLORO-2-BUTENE		5000	UG/L	R	8240W
	TOLUENE		37000	UG/L		
	PHENOL		190	UG/L		8270W
	ARAMITE		50	UG/L	R	
	4-NITROQUINOLINE-N-OXIDE		500	UG/L	R	
	3&4-METHYLPHENOL		110	UG/L		
	2,4-DICHLOROPHENOL		310	UG/L		
	1,2-DICHLOROBENZENE		21	UG/L	J	
	2,4-DIMETHYLPHENOL		32	UG/L	J	
	1,1-BIPHENYL		1.8	UG/L	J	
	2-METHYLPHENOL		450	UG/L		
	4-CHLORO-3-METHYLPHENOL		43	UG/L	J	
	BENZYL ALCOHOL		21	UG/L	J	
	IRGASAN DP-300		1200	UG/L		
	NAPHTHALENE		210	UG/L		
	1,4-DICHLOROBENZENE		2.3	UG/L	J	
	TOTAL ALKALINITY		225	MG/L		ALKZW
	BICARBONATE ALKALINITY	T	225	MG/L		

CIBA-GEIGY/Cranston Site

Validated Round II-S Analytic Laboratory Data

Medium: GROUNDWATER

SAMPLE NUMBER	ANALYTE	T/D	VALID DATA	UNITS	QUAL QC2	METHOD
MW-21S*II-S	BIOLOGICAL OXYGEN DEMAND - 5	T	84	UG/L		BOD5W
	CHLORIDE	T	90	MG/L		CHLOW
	CHEMICAL OXYGEN DEMAND	T	170	MG/L		CODZW
	LANGLIER INDEX		-.99	UG/L		CORRW
	TOTAL HARDNESS, AS CACO3		96	MG/L		HARDW
	AMMONIA AS N	T	1.71	MG/L		NH3NW
	NITRATE-NITRITE AS N	T	.018	UG/L		NO32W
	OIL AND GREASE	T	5.5	MG/L		ONGRW
	ORTHOPHOSPHATE	T	11	MG/L		OPO4W
	PH	T	6.7	MG/L		PHZZW
	SILICA,TOTAL		90000	MG/L		SIO2W
	SULFATE	T	28	MG/L		SO4ZW
	TOTAL DISSOLVED SOLIDS	T	530	MG/L		TDSZW
	TKN	T	3.91	MG/L		TKNZW
	TOTAL ORGANIC CARBON	T	27.1	MG/L		TOCZW
	TOTAL ORGANIC HALIDES	T	2.3	MG/L		TOXZW
	HYDROCARBONS	T	4.4	MG/L		TPHCW
	TOTAL SUSPENDED SOLIDS	T	2800	MG/L		TSSZW
MW-22S*II-S	SODIUM	T	23000	UG/L		6010W
	MAGNESIUM	D	10000	UG/L		

2S-RPT

CIBA-GEIGY/Cranston Site

Validated Round II-S Analytic Laboratory Data

Medium: GROUNDWATER

SAMPLE NUMBER	ANALYTE	T/D	VALID DATA	UNITS	QUAL QC2	METHOD
W-22S*II-S	IRON	D	57	UG/L		6010W
	CALCIUM	D	58000	UG/L		
	CALCIUM	T	60000	UG/L		
	IRON	T	11000	UG/L		
	MAGNESIUM	T	13000	UG/L		
	MANGANESE	T	380	UG/L		
	SODIUM	D	22000	UG/L		
	POTASSIUM	D	21	UG/L		
	MANGANESE	D	250	UG/L		
	POTASSIUM	T	22	UG/L		
	BARIUM	D	132	UG/L	J	
	CHROMIUM	T	18.3	UG/L		
	BARIUM	T	144	UG/L	J	
	SELENIUM	T	50	UG/L	R	7740W
	TRANS-1,4-DICHLORO-2-BUTENE		50	UG/L	R	8240W
	ACETONITRILE		5000	UG/L	R	
	2-BUTANONE		250	UG/L	R	
	ACROLEIN		500	UG/L	R	
	CHLOROBENZENE		640	UG/L		
	N-OCTANE		25	UG/L	R	
	ISOBUTANOL		5000	UG/L	R	
	PYRENE		.21	UG/L	J	8270W
	ARAMITE		10	UG/L	R	
	1,1-BIPHENYL		.076	UG/L	J	
	2-CYCLOHEXENE-1-ONE		.87	UG/L	J	
	4-NITROQUINOLINE-N-OXIDE		100	UG/L	R	
	BIS(2-ETHYLHEXYL)PHTHALATE		.62	UG/L	J	
	FLUORANTHENE		.19	UG/L	J	
	TOTAL ALKALINITY		197	MG/L		ALKZW
	BICARBONATE ALKALINITY	T	197	MG/L		
	BIOLOGICAL OXYGEN DEMAND - 5	T	2	UG/L		BOD5W
	CHLORIDE	T	6.8	MG/L		CHLOW
	CHEMICAL OXYGEN DEMAND	T	19	MG/L		CODZW

CIBA-GEIGY/Cranston Site

Validated Round II-S Analytic Laboratory Data

Medium: GROUNDWATER

AMPLE NUMBER	ANALYTE	T/D	VALID DATA	UNITS	QUAL QC2	METHOD
W-22S*II-S	LANGLIER INDEX		-.59	UG/L		CORRW
	TOTAL HARDNESS, AS CACO3		190	MG/L		HARDW
	AMMONIA AS N	T	2.8	MG/L		NH3NW
	NITRATE-NITRITE AS N	T	.11	UG/L		NO32W
	OIL AND GREASE	T	.77	MG/L		ONGRW
	ORTHOPHOSPHATE	T	1.3	MG/L		OPO4W
	PH	T	6.8	MG/L		PHZZW
	SILICA,TOTAL		34000	MG/L		SIO2W
	SULFATE	T	44	MG/L		SO4ZW
	TOTAL DISSOLVED SOLIDS	T	350	MG/L		TDSZW
	TKN	T	3	MG/L		TKNZW
	TOTAL ORGANIC CARBON	T	6.2	MG/L		TOCZW
	TOTAL ORGANIC HALIDES	T	.17	MG/L		TOXZW
	HYDROCARBONS	T	.48	MG/L		TPHCW
	TOTAL SUSPENDED SOLIDS	T	230	MG/L		TSSZW
MW-23S*II-S	POTASSIUM	T	3	UG/L		6010W
	SODIUM	T	25000	UG/L		
	IRON	T	9400	UG/L		
	MANGANESE	T	516	UG/L		
	IRON	D	60	UG/L		
	MANGANESE	D	290	UG/L		
	SODIUM	D	24000	UG/L		
	POTASSIUM	D	2.7	UG/L		
	MAGNESIUM	D	4500	UG/L		

2S-RPT

CIBA-GEIGY/Cranston Site

Validated Round II-S Analytic Laboratory Data

Medium: GROUNDWATER

SAMPLE NUMBER	ANALYTE	T/D	VALID DATA	UNITS	QUAL QC2	METHOD
W-23S*II-S	CALCIUM	D	28000	UG/L		6010W
	MAGNESIUM	T	61000	UG/L		
	CALCIUM	T	29000	UG/L		
	BARIUM	D	17.5	UG/L	J	
	BARIUM	T	31.3	UG/L	J	
	CHROMIUM	T	129	UG/L		
	COPPER	T	29.6	UG/L		
	LEAD	T	8.6	UG/L		7421W
	SELENIUM	T	10	UG/L	R	7740W
	TRANS-1,4-DICHLORO-2-BUTENE		10	UG/L	R	8240W
	ISOBUTANOL		1000	UG/L	R	
	CHLOROBENZENE		7.1	UG/L		
	2-BUTANONE		50	UG/L	R	
	ACROLEIN		100	UG/L	R	
	ACETONITRILE		1000	UG/L	R	
	PYRENE		.095	UG/L	J	8270W
	TINUVIN 327		.22	UG/L	J	
	FLUORANTHENE		.31	UG/L	J	
	4-NITROQUINOLINE-N-OXIDE		100	UG/L	R	
	2-CYCLOHEXENE-1-ONE		.65	UG/L	J	
	ARAMITE		10	UG/L	R	
	TOTAL ALKALINITY		60	MG/L		ALKZW
	BICARBONATE ALKALINITY	T	60	MG/L		
	BIOLOGICAL OXYGEN DEMAND - 5	T	.57	UG/L		BOD5W
	CHLORIDE	T	44	MG/L		CHLOW
	CHEMICAL OXYGEN DEMAND	T	6.6	MG/L		CODZW
	LANGLIER INDEX		-2.41	UG/L		CORRW
	TOTAL HARDNESS, AS CACO3		94	MG/L		HARDW
	AMMONIA AS N	T	.01	MG/L		NH3NW

CIBA-GEIGY/Cranston Site

Validated Round II-S Analytic Laboratory Data

Medium: GROUNDWATER

AMPLE NUMBER	ANALYTE	T/D	VALID DATA	UNITS	QUAL QC2	METHOD
W-23S*II-S	NITRATE-NITRITE AS N	T	.83	UG/L		NO32W
	OIL AND GREASE	T	.48	MG/L		ONGRW
	ORTHOPHOSPHATE	T	2.2	MG/L		OPO4W
	PH	T	5.8	MG/L		PHZZW
	SILICA,TOTAL		24000	MG/L		SIO2W
	SULFATE	T	15	MG/L		SO4ZW
	TOTAL DISSOLVED SOLIDS	T	210	MG/L		TDSZW
	TKN	T	.82	MG/L		TKNZW
	TOTAL ORGANIC CARBON	T	1.2	MG/L		TOCZW
	TOTAL ORGANIC HALIDES	T	.012	MG/L		TOXZW
	HYDROCARBONS	T	.53	MG/L		TPHCW
	TOTAL SUSPENDED SOLIDS	T	240	MG/L		TSSZW
I-24S*II-S	CALCIUM	D	23000	UG/L		6010W
	MANGANESE	D	5600	UG/L		
	MAGNESIUM	D	2400	UG/L		
	IRON	D	770	UG/L		
	CALCIUM	T	26000	UG/L		
	MANGANESE	T	17000	UG/L		
	MAGNESIUM	T	11000	UG/L		
	IRON	T	110000	UG/L		
	SODIUM	T	20000	UG/L		
	POTASSIUM	T	6.5	UG/L		
	SILICA,TOTAL		66000	MG/L		
	POTASSIUM	D	3.6	UG/L		
	SODIUM	D	19000	UG/L		
	TIN	D	57.1	UG/L		
	BARIUM	D	43.8	UG/L	J	

CIBA-GEIGY/Cranston Site

Validated Round II-S Analytic Laboratory Data

Medium: GROUNDWATER

SAMPLE NUMBER	ANALYTE	T/D	VALID DATA	UNITS	QUAL QC2	METHOD
W-24S*II-S	VANADIUM	T	24.1	UG/L	J	6010W
	CHROMIUM	T	40.3	UG/L		
	COPPER	T	87.6	UG/L		
	BARIUM	T	178	UG/L	J	
	COBALT	T	36.4	UG/L	J	
	ZINC	T	117	UG/L		
	TIN	T	83.4	UG/L		
	NICKEL	T	55.1	UG/L		
	ARSENIC	T	68.1	UG/L		7060W
	LEAD	T	49.5	UG/L		7421W
	SELENIUM	T	50	UG/L	R	7740W
	TRANS-1,4-DICHLORO-2-BUTENE		10	UG/L	R	8240W
	ACROLEIN		100	UG/L	R	
	2-BUTANONE		50	UG/L	R	
	ACETONITRILE		1000	UG/L	R	
	ISOBUTANOL		1000	UG/L	R	
	ARAMITE		10	UG/L	R	8270W
	2-CYCLOHEXENE-1-OL		.74	UG/L	J	
	2-CYCLOHEXENE-1-ONE		.41	UG/L	J	
	4-NITROQUINOLINE-N-OXIDE		100	UG/L	R	
	TOTAL ALKALINITY		50	MG/L		ALKZW
	BICARBONATE ALKALINITY	T	50	MG/L		
	BIOLOGICAL OXYGEN DEMAND - 5	T	.6	UG/L		BOD5W
	CHLORIDE	T	27	MG/L		CHLOW
	CHEMICAL OXYGEN DEMAND	T	6.6	MG/L		CODZW
	LANGLIER INDEX		-2.52	UG/L		CORRW
	TOTAL HARDNESS, AS CACO3		110	MG/L		HARDW
	AMMONIA AS N	T	.01	MG/L		NH3NW

CIBA-GEIGY/Cranston Site

Validated Round II-S Analytic Laboratory Data

Medium: GROUNDWATER

AMPLE NUMBER	ANALYTE	T/D	VALID DATA	UNITS	QUAL QC2	METHOD
W-24S*II-S	NITRATE-NITRITE AS N	T	1	UG/L		NO32W
	OIL AND GREASE	T	.48	MG/L		ONGRW
	ORTHOPHOSPHATE	T	5.9	MG/L		OPO4W
	PH	T	5.8	MG/L		PHZZW
	SULFATE	T	27	MG/L		SO4ZW
	TOTAL DISSOLVED SOLIDS	T	180	MG/L		TDSZW
	TKN	T	1.4	MG/L		TKNZW
	TOTAL ORGANIC CARBON	T	2.3	MG/L		TOCZW
	TOTAL ORGANIC HALIDES	T	.018	MG/L		TOXZW
	HYDROCARBONS	T	.38	MG/L		TPHCW
	TOTAL SUSPENDED SOLIDS	T	1900	MG/L		TSSZW
W-29D*II-S	MANGANESE	T	3000	UG/L		6010W
	MAGNESIUM	D	19000	UG/L		
	IRON	D	13000	UG/L		
	SODIUM	D	100000	UG/L		
	POTASSIUM	D	2.9	UG/L		
	MANGANESE	D	2500	UG/L		
	SODIUM	T	100000	UG/L		
	IRON	T	43000	UG/L		
	MAGNESIUM	T	25000	UG/L		
	CALCIUM	D	76000	UG/L		
	CALCIUM	T	80000	UG/L		
	POTASSIUM	T	6.1	UG/L		
	BARIUM	D	15.2	UG/L	J	
	VANADIUM	T	17.2	UG/L	J	
	COBALT	T	12.3	UG/L	J	
	COPPER	T	42.7	UG/L		
	NICKEL	T	73.4	UG/L		

CIBA-GEIGY/Cranston Site

Validated Round II-S Analytic Laboratory Data

Medium: GROUNDWATER

AMPLE NUMBER	ANALYTE	T/D	VALID DATA	UNITS	QUAL QC2	METHOD
W-29D*II-S	BARIUM	T	51.1	UG/L	J	6010W
	CHROMIUM	T	112	UG/L		
	ARSENIC	D	25.9	UG/L		7060W
	ARSENIC	T	54.9	UG/L		
	LEAD	T	13.3	UG/L		7421W
	SELENIUM	T	50	UG/L	R	7740W
	TRANS-1,4-DICHLORO-2-BUTENE		10	UG/L	R	8240W
	N-OCTANE		5	UG/L	R	
	ANILINE		.3	UG/L	J	8270W
	2-CYCLOHEXENE-1-OL		.59	UG/L	J	
	ARAMITE		10	UG/L	R	
	4-NITROQUINOLINE-N-OXIDE		100	UG/L	R	
	TOTAL ALKALINITY		84	MG/L		ALKZW
	BICARBONATE ALKALINITY	T	84	MG/L		
	BIOLOGICAL OXYGEN DEMAND - 5	T	1.3	UG/L		BOD5W
	CHLORIDE	T	30	MG/L		CHLOW
	CHEMICAL OXYGEN DEMAND	T	6.6	MG/L		CODZW
	LANGLIER INDEX		-1.16	UG/L		CORRW
	TOTAL HARDNESS, AS CACO3		290	MG/L		HARDW
	AMMONIA AS N	T	.72	MG/L		NH3NW
	NITRATE-NITRITE AS N	T	.04	UG/L		NO32W
	ORTHOPHOSPHATE	T	4.5	MG/L		OPO4W
	PH	T	6.5	MG/L		PHZZW
	SILICA,TOTAL		39000	MG/L		SIO2W

CIBA-GEIGY/Cranston Site

Validated Round II-S Analytic Laboratory Data

Medium: GROUNDWATER

AMPLE NUMBER	ANALYTE	T/D	VALID DATA	UNITS	QUAL QC2	METHOD
W-29D*II-S	SULFATE	T	390	MG/L		SO4ZW
	TOTAL DISSOLVED SOLIDS	T	650	MG/L		TDSZW
	TKN	T	.82	MG/L		TKNZW
	TOTAL ORGANIC CARBON	T	2.53	MG/L		TOCZW
	TOTAL SUSPENDED SOLIDS	T	590	MG/L		TSSZW
MW-29S*II-S	NICKEL	D	44.1	UG/L		6010W
	BARIUM	T	51.5	UG/L	J	
	CHROMIUM	T	144	UG/L		
	NICKEL	T	102	UG/L		
	VANADIUM	T	10.8	UG/L	J	
	COPPER	T	53.8	UG/L		
	BARIUM	D	11.2	UG/L	J	
	MANGANESE	T	450	UG/L		
	SODIUM	D	23000	UG/L		
	POTASSIUM	D	2.2	UG/L		
	CALCIUM	T	14000	UG/L		
	CALCIUM	D	13000	UG/L		
	MAGNESIUM	D	3400	UG/L		
	MANGANESE	D	240	UG/L		
	IRON	D	25000	UG/L		
	MAGNESIUM	T	6700	UG/L		
	IRON	T	57000	UG/L		
	POTASSIUM	T	2.9	UG/L		
	SODIUM	T	22000	UG/L		
	ARSENIC	D	41.6	UG/L		7060W
	ARSENIC	T	56.3	UG/L		
	LEAD	T	28.1	UG/L		7421W
	SELENIUM	T	50	UG/L	R	7740W
	TRANS-1,4-DICHLORO-2-BUTENE		10	UG/L	R	8240W
	CHLOROBENZENE		5.7	UG/L		

2S-RPT

CIBA-GEIGY/Cranston Site

Validated Round II-S Analytic Laboratory Data

Medium: GROUNDWATER

SAMPLE NUMBER	ANALYTE	T/D	VALID DATA	UNITS	QUAL QC2	METHOD
..W-29S*II-S	ARAMITE		10	UG/L	R	8270W
	2-CYCLOHEXENE-1-ONE		.8	UG/L	J	
	1,1-BIPHENYL		.11	UG/L	J	
	4-NITROQUINOLINE-N-OXIDE		100	UG/L	R	
	TOTAL ALKALINITY		32	MG/L		ALKZW
	BICARBONATE ALKALINITY	T	32	MG/L		
	BIOLOGICAL OXYGEN DEMAND - 5	T	1.3	UG/L		BOD5W
	CHLORIDE	T	34	MG/L		CHLOW
	CHEMICAL OXYGEN DEMAND	T	10	MG/L		CODZW
	LANGLIER INDEX		-2.67	UG/L		CORRW
	TOTAL HARDNESS, AS CACO3		67	MG/L		HARDW
	AMMONIA AS N	T	.087	MG/L		NH3NW
	NITRATE-NITRITE AS N	T	.02	UG/L		NO32W
	ORTHOPHOSPHATE	T	6.2	MG/L		OPO4W
	PH	T	6.1	MG/L		PHZZW
	SILICA,TOTAL		45000	MG/L		SIO2W
	SULFATE	T	21	MG/L		SO4ZW
	TOTAL DISSOLVED SOLIDS	T	160	MG/L		TDSZW
	TKN	T	.82	MG/L		TKNZW
	TOTAL ORGANIC CARBON	T	1.45	MG/L		TOCZW
	TOTAL ORGANIC HALIDES	T	.014	MG/L		TOXZW
	TOTAL SUSPENDED SOLIDS	T	520	MG/L		TSSZW

CIBA-GEIGY/Cranston Site

Validated Round II-S Analytic Laboratory Data

Medium: GROUNDWATER

AMPLE NUMBER	ANALYTE	T/D	VALID DATA	UNITS	QUAL QC2	METHOD
N-30D*II-S	MAGNESIUM	T	22000	UG/L		6010W
	SODIUM	D	26000	UG/L		
	POTASSIUM	D	3.8	UG/L		
	MANGANESE	D	2100	UG/L		
	MAGNESIUM	D	3600	UG/L		
	IRON	D	23000	UG/L		
	CALCIUM	D	12000	UG/L		
	IRON	T	135000	UG/L		
	POTASSIUM	T	10	UG/L		
	SODIUM	T	27000	UG/L		
	MANGANESE	T	3500	UG/L		
	CALCIUM	T	22000	UG/L		
	NICKEL	D	45.2	UG/L		
	VANADIUM	T	80.2	UG/L		
	ZINC	T	435	UG/L		
	BARIUM	D	23.8	UG/L	J	
	CHROMIUM	T	115	UG/L		
	COPPER	T	212	UG/L		
	NICKEL	T	184	UG/L		
	BARIUM	T	173	UG/L	J	
	COBALT	T	55.5	UG/L		
	ARSENIC	D	61.7	UG/L		7060W
	ARSENIC	T	120	UG/L		
	LEAD	T	45.1	UG/L		7421W
	SELENIUM	T	50	UG/L	R	7740W
	TRANS-1,4-DICHLORO-2-BUTENE		10	UG/L	R	8240W
	N-OCTANE		5	UG/L	R	
	ARAMITE		10	UG/L	R	8270W
	ANILINE		.26	UG/L	J	
	4-NITROQUINOLINE-N-OXIDE		100	UG/L	R	
	TOTAL ALKALINITY		36	MG/L		ALKZW
	BICARBONATE ALKALINITY	T	36	MG/L		

CIBA-GEIGY/Cranston Site

Validated Round II-S Analytic Laboratory Data

Medium: GROUNDWATER

AMPLE NUMBER	ANALYTE	T/D	VALID DATA	UNITS	QUAL QC2	METHOD
W-30D*II-S	BIOLOGICAL OXYGEN DEMAND - 5	T	.68	UG/L		BOD5W
	CHLORIDE	T	40	MG/L		CHLOW
	CHEMICAL OXYGEN DEMAND	T	9	MG/L		CODZW
	LANGLIER INDEX		-2.64	UG/L		CORRW
	TOTAL HARDNESS, AS CACO3		95	MG/L		HARDW
	AMMONIA AS N	T	.18	MG/L		NH3NW
	NITRATE-NITRITE AS N	T	.04	UG/L		NO32W
	ORTHOPHOSPHATE	T	.17	MG/L		OPO4W
	PH	T	5.9	MG/L		PHZZW
	SILICA,TOTAL		130000	MG/L		SIO2W
	SULFATE	T	34	MG/L		SO4ZW
	TOTAL DISSOLVED SOLIDS	T	200	MG/L		TDSZW
	TKN	T	1.8	MG/L		TKNZW
	TOTAL ORGANIC CARBON	T	1.57	MG/L		TOCZW
	TOTAL SUSPENDED SOLIDS	T	4800	MG/L		TSSZW
MW-30S*II-S	MANGANESE	T	770	UG/L		6010W
	COPPER	T	67.8	UG/L		
	CHROMIUM	T	32.6	UG/L		
	BARIUM	T	32.1	UG/L	J	
	ZINC	T	382	UG/L		
	SODIUM	D	21000	UG/L		
	POTASSIUM	D	3.2	UG/L		
	MANGANESE	D	700	UG/L		
	MAGNESIUM	D	3300	UG/L		

CIBA-GEIGY/Cranston Site

Validated Round II-S Analytic Laboratory Data

Medium: GROUNDWATER

SAMPLE NUMBER	ANALYTE	T/D	VALID DATA	UNITS	QUAL QC2	METHOD
W-30S*II-S	IRON	D	8800	UG/L		6010W
	CALCIUM	D	21000	UG/L		
	MAGNESIUM	T	4400	UG/L		
	IRON	T	17000	UG/L		
	BARIUM	D	14.6	UG/L	J	
	CALCIUM	T	22000	UG/L		
	SODIUM	T	21000	UG/L		
	POTASSIUM	T	4.1	UG/L		
	LEAD	T	18	UG/L		7421W
	SELENIUM	T	50	UG/L	R	7740W
	TOLUENE		530	UG/L	J	8240W
	TRANS-1,4-DICHLORO-2-BUTENE		50	UG/L	R	
	O-XYLENE		39	UG/L	J	
	ETHYLBENZENE		40	UG/L	J	
	M&P-XYLENE		130	UG/L	J	
	NAPHTHALENE		.65	UG/L	J	8270W
	4-NITROQUINOLINE-N-OXIDE		100	UG/L	R	
	ARAMITE		10	UG/L	R	
	2,4-DIMETHYLPHENOL		.47	UG/L	J	
	3&4-METHYLPHENOL		7.9	UG/L	J	
	BENZYL ALCOHOL		.29	UG/L	J	
	ANILINE		.32	UG/L	J	
	BICARBONATE ALKALINITY	T	50	MG/L		ALKZW
	TOTAL ALKALINITY		50	MG/L		
	BIOLOGICAL OXYGEN DEMAND - 5	T	1.2	UG/L		BOD5W
	CHLORIDE	T	35	MG/L		CHLOW
	CHEMICAL OXYGEN DEMAND	T	6.6	MG/L		CODZW
	LANGLIER INDEX		-2.28	UG/L		CORRW
	TOTAL HARDNESS, AS CACO3		70	MG/L		HARDW
	AMMONIA AS N	T	.05	MG/L		NH3NW

CIBA-GEIGY/Cranston Site

Validated Round II-S Analytic Laboratory Data

Medium: GROUNDWATER

AMPLE NUMBER	ANALYTE	T/D	VALID DATA	UNITS	QUAL QC2	METHOD
MW-30S*II-S	NITRATE-NITRITE AS N	T	.03	UG/L		NO32W
	ORTHOPHOSPHATE	T	2.4	MG/L		OPO4W
	PH	T	6.1	MG/L		PHZZW
	SILICA,TOTAL		16000	MG/L		SIO2W
	SULFATE	T	16	MG/L		SO4ZW
	TOTAL DISSOLVED SOLIDS	T	170	MG/L		TDSZW
	TKN	T	.82	MG/L		TKNZW
	TOTAL ORGANIC CARBON	T	.94	MG/L		TOCZW
	TOTAL ORGANIC HALIDES	T	.016	MG/L		TOXZW
	TOTAL SUSPENDED SOLIDS	T	320	MG/L		TSSZW
W-31D*II-S	SODIUM	T	30000	UG/L		6010W
	IRON	T	47000	UG/L		
	MANGANESE	T	2100	UG/L		
	SODIUM	D	30000	UG/L		
	POTASSIUM	T	4.2	UG/L		
	CALCIUM	T	30000	UG/L		
	CALCIUM	D	25000	UG/L		
	MAGNESIUM	D	6200	UG/L		
	IRON	D	9100	UG/L		
	CHROMIUM	T	53.9	UG/L		
	BARIUM	T	96.6	UG/L	J	
	NICKEL	T	46	UG/L		
	COPPER	T	90	UG/L		
	COBALT	T	18.5	UG/L	J	
	ZINC	T	242	UG/L		
	VANADIUM	T	35.4	UG/L	J	
	BARIUM	D	20.3	UG/L	J	
	POTASSIUM	D	2.2	UG/L		

CIBA-GEIGY/Cranston Site

Validated Round II-S Analytic Laboratory Data

Medium: GROUNDWATER

AMPLE NUMBER	ANALYTE	T/D	VALID DATA	UNITS	QUAL QC2	METHOD
N-31D*II-S	MANGANESE	D	1500	UG/L		6010W
	MAGNESIUM	T	14000	UG/L		
	ARSENIC	D	25.3	UG/L		7060W
	ARSENIC	T	42.8	UG/L		
	LEAD	T	28.3	UG/L		7421W
	SELENIUM	T	50	UG/L	R	7740W
	TRANS-1,4-DICHLORO-2-BUTENE		20	UG/L	R	8240W
	CHLOROBENZENE		230	UG/L	J	
	M&P-XYLENE		15	UG/L	J	
	NAPHTHALENE		4.5	UG/L	J	8270W
	ARAMITE		10	UG/L	R	
	4-CHLORO-3-METHYLPHENOL		2	UG/L	J	
	4-NITROQUINOLINE-N-OXIDE		100	UG/L	R	
	ANILINE		.23	UG/L	J	
	BUTAZOLIDIN		3.1	UG/L	J	
	BICARBONATE ALKALINITY	T	87	MG/L		ALKZW
	TOTAL ALKALINITY		87	MG/L		
	BIOLOGICAL OXYGEN DEMAND - 5	T	3	UG/L		BOD5W
	CHLORIDE	T	40	MG/L		CHLOW
	CHEMICAL OXYGEN DEMAND	T	8	MG/L		CODZW
	LANGLIER INDEX		-1.83	UG/L		CORRW
	TOTAL HARDNESS, AS CACO3		110	MG/L		HARDW
	AMMONIA AS N	T	.25	MG/L		NH3NW
	NITRATE-NITRITE AS N	T	.07	UG/L		NO32W
	ORTHOPHOSPHATE	T	6.6	MG/L		OPO4W
	PH	T	6.2	MG/L		PHZZW

CIBA-GEIGY/Cranston Site

Validated Round II-S Analytic Laboratory Data

Medium: GROUNDWATER

AMPLE NUMBER	ANALYTE	T/D	VALID DATA	UNITS	QUAL QC2	METHOD
MW-31D*II-S	SILICA,TOTAL		58000	MG/L		SIO2W
	SULFATE	T	6.1	MG/L		SO4ZW
	OCDD		3	UG/L		SOWZW
	TOTAL DISSOLVED SOLIDS	T	200	MG/L		TDSZW
	TKN	T	.82	MG/L		TKNZW
	TOTAL ORGANIC CARBON	T	10	MG/L		TOCZW
	TOTAL ORGANIC HALIDES	T	.038	MG/L		TOXZW
	TOTAL SUSPENDED SOLIDS	T	830	MG/L		TSSZW
MW-31S*II-S	POTASSIUM	T	16	UG/L		6010W
	VANADIUM	T	757	UG/L		
	BARIUM	D	39.8	UG/L	J	
	POTASSIUM	D	2.3	UG/L		
	MANGANESE	D	1500	UG/L		
	MAGNESIUM	D	6600	UG/L		
	IRON	D	6700	UG/L		
	CALCIUM	D	27000	UG/L		
	CALCIUM	T	92000	UG/L		
	ANTIMONY	T	86.1	UG/L		
	NICKEL	T	549	UG/L		
	COPPER	T	551	UG/L		
	COBALT	T	338	UG/L		
	CHROMIUM	T	618	UG/L		
	BERYLLIUM	T	20.4	UG/L		
	ZINC	T	1510	UG/L		
	SODIUM	D	29000	UG/L		
	BARIUM	T	1140	UG/L		
	MANGANESE	T	5000	UG/L		
	MAGNESIUM	T	35000	UG/L		
	IRON	T	68000	UG/L		
	SODIUM	T	30000	UG/L		

CIBA-GEIGY/Cranston Site

Validated Round II-S Analytic Laboratory Data

Medium: GROUNDWATER

SAMPLE NUMBER	ANALYTE	T/D	VALID DATA	UNITS	QUAL QC2	METHOD
..W-31S*II-S	ARSENIC	D	20.5	UG/L		7060W
	ARSENIC	T	109	UG/L		
	LEAD	T	263	UG/L		7421W
	SELENIUM	T	50	UG/L	R	7740W
	TRANS-1,4-DICHLORO-2-BUTENE		10	UG/L	R	8240W
	N-OCTANE		5	UG/L	R	
	CHLOROBENZENE		34	UG/L	J	
	BUTAZOLIDIN		8.9	UG/L	J	8270W
	ARAMITE		10	UG/L	R	
	4-NITROQUINOLINE-N-OXIDE		100	UG/L	R	
	TOTAL ALKALINITY		84	MG/L		ALKZW
	BICARBONATE ALKALINITY	T	84	MG/L		
	BIOLOGICAL OXYGEN DEMAND - 5	T	1.7	UG/L		BOD5W
	CHLORIDE	T	42	MG/L		CHLOW
	CHEMICAL OXYGEN DEMAND	T	18	MG/L		CODZW
	LANGLIER INDEX		-1.15	UG/L		CORRW
	TOTAL HARDNESS, AS CACO3		360	MG/L		HARDW
	AMMONIA AS N	T	.29	MG/L		NH3NW
	NITRATE-NITRITE AS N	T	.05	UG/L		NO32W
	ORTHOPHOSPHATE	T	61	MG/L		OPO4W
	PH	T	6.4	MG/L		PHZZW
	SILICA,TOTAL		160000	MG/L		SIO2W
	SULFATE	T	5.6	MG/L		SO4ZW

CIBA-GEIGY/Cranston Site

Validated Round II-S Analytic Laboratory Data

Medium: GROUNDWATER

AMPLE NUMBER	ANALYTE	T/D	VALID DATA	UNITS	QUAL QC2	METHOD
W-31S*II-S	TOTAL DISSOLVED SOLIDS	T	200	MG/L		TDSZW
	TKN	T	2.1	MG/L		TKNZW
	TOTAL ORGANIC CARBON	T	2.83	MG/L		TOCZW
	TOTAL ORGANIC HALIDES	T	.015	MG/L		TOXZW
	TOTAL SUSPENDED SOLIDS	T	6400	MG/L		TSSZW
MW-DUP	POTASSIUM	D	3.4	UG/L		6010W
	SODIUM	D	170000	UG/L		
	CALCIUM	D	23000	UG/L		
	MAGNESIUM	D	3000	UG/L		
	MANGANESE	D	720	UG/L		
	IRON	D	1900	UG/L		
	MANGANESE	T	1100	UG/L		
	MAGNESIUM	T	9500	UG/L		
	IRON	T	38000	UG/L		
	CALCIUM	T	27000	UG/L		
	SODIUM	T	170000	UG/L		
	POTASSIUM	T	6.53	UG/L		
	TOTAL ALKALINITY		231	MG/L		ALKZW
	BICARBONATE ALKALINITY	T	231	MG/L		
	BIOLOGICAL OXYGEN DEMAND - 5	T	97	UG/L		BOD5W
	CHLORIDE	T	95	MG/L		CHLOW
	CHEMICAL OXYGEN DEMAND	T	290	MG/L		CODZW
	LANGLIER INDEX		-1.08	UG/L		CORRW
	TOTAL HARDNESS, AS CACO3		83	MG/L		HARDW
	AMMONIA AS N	T	1.7	MG/L		NH3NW
	NITRATE-NITRITE AS N	T	.03	UG/L		NO32W

CIBA-GEIGY/Cranston Site

Validated Round II-S Analytic Laboratory Data

Medium: GROUNDWATER

SAMPLE NUMBER	ANALYTE	T/D	VALID DATA	UNITS	QUAL QC2	METHOD
..W-DUP	OIL AND GREASE	T	6.1	MG/L		ONGRW
	ORTHOPHOSPHATE	T	4.9	MG/L		OPO4W
	PH	T	6.6	MG/L		PHZZW
	SILICA,TOTAL		47000	MG/L		SIO2W
	SULFATE	T	29	MG/L		SO4ZW
	TOTAL DISSOLVED SOLIDS	T	520	MG/L		TDSZW
	TKN	T	3.9	MG/L		TKNZW
	TOTAL ORGANIC CARBON	T	23.1	MG/L		TOCZW
	HYDROCARBONS	T	4.9	MG/L		TPHCW
	TOTAL SUSPENDED SOLIDS	T	760	MG/L		TSSZW
W-DUP*II-S	BARIUM	D	56.8	UG/L	J	6010W
	VANADIUM	T	60	UG/L		
	ZINC	T	190	UG/L		
	COPPER	T	56.4	UG/L		
	NICKEL	T	64.9	UG/L		
	COBALT	T	23.4	UG/L	J	
	CHROMIUM	T	67.8	UG/L		
	BARIUM	T	177	UG/L	J	
	ARSENIC	T	23.1	UG/L		7060W
	LEAD	T	22.9	UG/L		7421W
	SELENIUM	T	50	UG/L	R	7740W
	TOLUENE		33000	UG/L		8240W
	TRANS-1,4-DICHLORO-2-BUTENE		5000	UG/L	R	

2S-RPT

CIBA-GEIGY/Cranston Site

Validated Round II-S Analytic Laboratory Data

Medium: GROUNDWATER

SAMPLE NUMBER	ANALYTE	T/D	VALID DATA	UNITS	QUAL QC2	METHOD
W-DUP*II-S	PHENOL		210	UG/L		8270W
	IRGASAN DP-300		760	UG/L	J	
	ARAMITE		50	UG/L	R	
	4-NITROQUINOLINE-N-OXIDE		500	UG/L	R	
	3&4-METHYLPHENOL		130	UG/L		
	2-METHYLPHENOL		450	UG/L		
	1,2-DICHLOROBENZENE		25	UG/L	J	
	1,1-BIPHENYL		2.1	UG/L	J	
	1,4-DIOXANE		10	UG/L	J	
	1,4-DICHLOROBENZENE		2.8	UG/L	J	
	2,4-DIMETHYLPHENOL		36	UG/L	J	
	2,4-DICHLOROPHENOL		350	UG/L		
	4-CHLORO-3-METHYLPHENOL		23	UG/L	J	
	BENZYL ALCOHOL		24	UG/L	J	
	NAPHTHALENE		240	UG/L		
	TOTAL ORGANIC HALIDES	T	2.7	MG/L		TOXZW
MW-TB8-5*II-S	TRANS-1,4-DICHLORO-2-BUTENE		10	UG/L	R	8240W
MW-TB8-6*II-S	TRANS-1,4-DICHLORO-2-BUTENE		10	UG/L	R	8240W
	N-OCTANE		5	UG/L	R	
MWFB8-5*II-S	SELENIUM	T	10	UG/L	R	7740W
	TRANS-1,4-DICHLORO-2-BUTENE		10	UG/L	R	8240W
	BUTYLBENZYLPHTHALATE		.19	UG/L	J	8270W
	2-METHYLNAPHTHALENE		.11	UG/L	J	
	2-METHYLPHENOL		.44	UG/L	J	
	ACETOPHENONE		1.4	UG/L	J	
	DI-N-BUTYLPHTHALATE		.27	UG/L	J	
	ARAMITE		10	UG/L	R	
	4-NITROQUINOLINE-N-OXIDE		100	UG/L	R	

CIBA-GEIGY/Cranston Site

Validated Round II-S Analytic Laboratory Data

Medium: GROUNDWATER

SAMPLE NUMBER	ANALYTE	T/D	VALID DATA	UNITS	QUAL QC2	METHOD
NFB8-5*II-S	TOTAL ORGANIC HALIDES	T	.054	MG/L		TOXZW
WTB8*II-S	TRANS-1,4-DICHLORO-2-BUTENE		10	UG/L	R	8240W
	ISOBUTANOL		1000	UG/L	R	
	ACETONITRILE		1000	UG/L	R	
	ACROLEIN		100	UG/L	R	
	2-BUTANONE		50	UG/L	R	
RC-1*II-S	BARIUM	D	28.4	UG/L	J	6010W
	BARIUM	T	45.6	UG/L	J	
	POTASSIUM	T	6.6	UG/L		
	IRON	T	30000	UG/L		
	SODIUM	T	28000	UG/L		
	CALCIUM	T	33000	UG/L		
	MAGNESIUM	T	6900	UG/L		
	MANGANESE	T	1000	UG/L		
	MAGNESIUM	D	4600	UG/L		
	IRON	D	13000	UG/L		
	CALCIUM	D	29000	UG/L		
	SODIUM	D	27000	UG/L		
	POTASSIUM	D	5.6	UG/L		
	MANGANESE	D	750	UG/L		
	ARSENIC	T	13.7	UG/L		7060W
	LEAD	T	5.5	UG/L		7421W
	SELENIUM	T	10	UG/L	R	7740W
	TRANS-1,4-DICHLORO-2-BUTENE		10	UG/L	R	8240W
	M&P-XYLENE		7.7	UG/L		
	CHLOROBENZENE		65	UG/L	J	
	IRGASAN DP-300		2.6	UG/L	J	8270W
	ARAMITE		10	UG/L	R	
	4-NITROQUINOLINE-N-OXIDE		100	UG/L	R	
	1,1-BIPHENYL		.27	UG/L	J	

CIBA-GEIGY/Cranston Site

Validated Round II-S Analytic Laboratory Data

Medium: GROUNDWATER

SAMPLE NUMBER	ANALYTE	T/D	VALID DATA	UNITS	QUAL QC2	METHOD
MC-1*II-S	CYANIDE	T	64.5	MG/L		9010W
	BICARBONATE ALKALINITY	T	85	MG/L		ALKZW
	TOTAL ALKALINITY		85	MG/L		
	BIOLOGICAL OXYGEN DEMAND - 5	T	1.5	UG/L		BOD5W
	CHLORIDE	T	32	MG/L		CHLOW
	CHEMICAL OXYGEN DEMAND	T	11	MG/L		CODZW
	LANGLIER INDEX		-1.79	UG/L		CORRW
	TOTAL HARDNESS, AS CACO3		100	MG/L		HARDW
	AMMONIA AS N	T	.65	MG/L		NH3NW
	NITRATE-NITRITE AS N	T	.06	UG/L		NO32W
	OIL AND GREASE	T	.48	MG/L		ONGRW
	ORTHOPHOSPHATE	T	2.6	MG/L		OPO4W
	PH	T	6.2	MG/L		PHZZW
	SILICA,TOTAL		32000	MG/L		SIO2W
	SULFATE	T	27	MG/L		SO4ZW
	TOTAL DISSOLVED SOLIDS	T	190	MG/L		TDSZW
	TKN	T	1	MG/L		TKNZW
	TOTAL ORGANIC CARBON	T	5.57	MG/L		TOCZW
	TOTAL ORGANIC HALIDES	T	.076	MG/L		TOXZW
	HYDROCARBONS	T	.56	MG/L		TPHCW
	TOTAL SUSPENDED SOLIDS	T	620	MG/L		TSSZW

CIBA-GEIGY/Cranston Site

Validated Round II-S Analytic Laboratory Data

Medium: GROUNDWATER

AMPLE NUMBER	ANALYTE	T/D	VALID DATA	UNITS	QUAL QC2	METHOD
C-2*II-S	BARIUM	T	44.7	UG/L	J	6010W
	MAGNESIUM	D	7400	UG/L		
	IRON	D	6500	UG/L		
	CALCIUM	D	30000	UG/L		
	SODIUM	D	40000	UG/L		
	POTASSIUM	D	3.2	UG/L		
	MANGANESE	D	820	UG/L		
	SODIUM	T	41000	UG/L		
	IRON	T	6800	UG/L		
	MAGNESIUM	T	7700	UG/L		
	MANGANESE	T	830	UG/L		
	CALCIUM	T	31000	UG/L		
	POTASSIUM	T	3.3	UG/L		
	BARIUM	D	44.3	UG/L	J	
	CHROMIUM	T	26.7	UG/L		
	SELENIUM	T	10	UG/L	R	7740W
	TOLUENE		28	UG/L	J	8240W
	CHLOROBENZENE		36	UG/L	J	
	N-OCTANE		5	UG/L	R	
	TRANS-1,4-DICHLORO-2-BUTENE		10	UG/L	R	
	PROPAZINE		20	UG/L	R	8270W
	ARAMITE		10	UG/L	R	
	2-CHLOROPHENOL		.38	UG/L	J	
	4-NITROQUINOLINE-N-OXIDE		100	UG/L	R	
	BUTAZOLIDIN		3.7	UG/L	J	
	CYANIDE	T	13.2	MG/L		9010W
	TOTAL ALKALINITY		101	MG/L		ALKZW
	BICARBONATE ALKALINITY	T	101	MG/L		
	BIOLOGICAL OXYGEN DEMAND - 5	T	2.7	UG/L		BOD5W
	CHLORIDE	T	50	MG/L		CHLOW

CIBA-GEIGY/Cranston Site

Validated Round II-S Analytic Laboratory Data

Medium: GROUNDWATER

SAMPLE NUMBER	ANALYTE	T/D	VALID DATA	UNITS	QUAL QC2	METHOD
C-2*II-S	CHEMICAL OXYGEN DEMAND	T	6.6	MG/L		CODZW
	LANGLIER INDEX		-1.46	UG/L		CORRW
	TOTAL HARDNESS, AS CACO3		110	MG/L		HARDW
	AMMONIA AS N	T	.012	MG/L		NH3NW
	NITRATE-NITRITE AS N	T	.03	UG/L		NO32W
	ORTHOPHOSPHATE	T	.69	MG/L		OPO4W
	PH	T	6.5	MG/L		PHZZW
	SILICA,TOTAL		12000	MG/L		SIO2W
	SULFATE	T	19	MG/L		SO4ZW
	TOTAL DISSOLVED SOLIDS	T	250	MG/L		TDSZW
	TKN	T	.82	MG/L		TKNZW
	TOTAL ORGANIC CARBON	T	1.88	MG/L		TOCZW
	TOTAL ORGANIC HALIDES	T	.27	MG/L		TOXZW
	HYDROCARBONS	T	.96	MG/L		TPHCW
	TOTAL SUSPENDED SOLIDS	T	17	MG/L		TSSZW

2S-RPT

22 rows selected.

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